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ABSTRACT

This article explores an approach for better serving the complete health care needs of children, specifically, the efficacy of school-based health centers (SBHCs) to provide a service delivery mechanism capable of functioning as a medical home for children, providing primary care for both their physical and behavioral health care needs. The article examines the need for SBHCs, presenting supporting data that indicate adolescent access to health care is lacking and that children and adolescents have significant needs to be served due to unhealthy lifestyles, chronic illness, and mental illness. The school-based health center concept as it functions in Connecticut is detailed, including the planning process by which such centers are developed and services are made available. The seven organizational structures utilized in the case study are: (1) hospitals; (2) community health centers; (3) private, not-for-profit boards of directors; (4) human service agencies; (5) boards of education; (6) city health departments; and (7) social service/mental health agencies. Finally, the chapter provides a series of 12 recommendations for the future development of these services within the Healthy People 2010 initiative, addressing financial support, preventive care, types of services offered, interventions, staffing, disciplinary integration, parental involvement, and payment. Contains 24 references. (SD)

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CHAPTER 6 •

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Improving Access to Health Care: School-Based Health Centers

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PS 026130

It is one thing to imagine a healthier people. It is quite another to undertake the necessary steps to turn those thoughts into reality. *Healthy People 2000* and this volume are testaments to the reality that business as usual will not suffice. Improving the health of children and families in this country will require that we care for people differently. The current health care system (including every level responsible for the nation's health from policymakers, to federal and state regulators, to those in research, public health, and direct practice) can lay claim to having improved the general health of the populace since the turn of the century. But the cost of that care, focusing as it does on remediation, has become cost prohibitive and forced millions of Americans to go without care. These circumstances have caused the United States to reexamine its health care system and explore different models of care to not only control cost but to extend care to those in need.

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We believe that this desire to improve the nation's health stems from the following premises. First, it is not acceptable for children to lack a medical home, as millions do. Similarly, it is not acceptable that the working poor cannot afford health care insurance, as millions cannot. It is not acceptable for insurers to discriminate between physical and behavioral health benefits, depriving individuals of the care necessary to improve their quality of life and denying society fully productive citizens, as they do. It is not acceptable for preventable habits that form early in life, such as the use of alcohol, tobacco, and other drugs, to remain unprevented, resulting in monstrous costs to both the individual later in life and the larger society.

In this chapter, we explore one approach to better serving the complete health care needs of children. We examine the promise of school-based health centers (SBHCs) to deliver such health care. SBHCs represent a service delivery mechanism capable of functioning as a medical home for children, providing primary care for both their physical and behavioral health care needs. This service delivery model has the capacity to promote health and prevent illness. Presently, there are a mere handful of these centers nationwide, with most operating on shoestring budgets and unbeknown to third-party payers. Unfortunately, although anecdotal and single-case studies abound, little experimental data exist on the effectiveness of the services they provide. Rather than disparaging SBHCs, this lack of data may be more reflective of a lack of proper evaluations.

SBHCs appear to be a promising delivery mechanism. They are equipped to fill the gaps created by the changing topography of today's workforce and neighborhoods. As the percentage of women in the workforce with children under the age of 18 increases to and exceeds 65%, and as welfare reform limiting the duration of benefits becomes instituted, we believe schools will be called on to extend their child care hours and facilities. Evidence for this extension of services can already be found in programs such as after-school latchkey programs, extended-day kindergarten, and school breakfast programs. Additionally, given that the decision on where individuals work, live, and send their children to school is no longer based on neighborhood proximity, securing primary health care has grown increasingly complicated. Because of conflicting work and family demands, parents are frequently forced to break health care

appointments. This likely does not represent intentional child medical negligence, but rather the inability of many in our labor force, particularly those in the lowest-paid service sector, to alter their work schedules. Conflicts between work and child health care become more difficult to manage as incomes decline and work responsibilities become more fixed. For example, "no show" and cancellation rates approach 25% for many health care providers serving the working poor. Thus, the use of existing school sites as health care delivery sites is appealing from both the service delivery and cost containment perspectives.

In the sections that follow, we examine the need for SBHCs. We look at the planning process by which such centers are developed and services are made available, as well as using data on a state level. Finally, we conclude with a series of recommendations for the future development of these services.

Adolescent Access to Health Care

In 1993, more than 17% of the U.S. population under the age of 65 had no health insurance. Of 40 million uninsured Americans, 8.4 million were children under 15 years of age (U.S. Department of Health and Human Services [DHHS], 1995b). This number of uninsured individuals represents an increase in uninsured individuals among all age groups except children under the age of 5 (DHHS, 1995b). Access to health insurance is often related to family income. In 1993, 35% of individuals with family incomes less than $14,000 were uninsured, compared with only 5% of those with family incomes of $50,000 or more. Even though those with lower family incomes were much more likely to be uninsured, a higher family income does not guarantee adequate coverage. For example, 32% of all uninsured individuals in 1993 had family incomes ranging from $14,000 to $24,999 and 24% of the uninsured had incomes ranging from $25,000 to $49,000. In 1993, nearly 66% of youth resided with family able to afford private insurance or whose employers provided medical insurance. Nearly 19% of young people lived in families who, because of poverty, qualify for Medicaid. The remaining 15% of children live in families unable to afford health insurance and whose employers

either do not offer medical insurance or offer it with copayments the employees cannot afford (DHHS, 1995b).

Family income not only affects health insurance status but also the amount and types of medical services received. During 1991-1993, nonpoor children with good to excellent health status had approximately 30% more physician contacts on average than poor or near-poor children with good to excellent health, whereas nonpoor children with fair to poor health status had 86% more physician contacts than poor children and 46% more than near-poor children with similar health status (DHHS, 1995b). Newacheck, Hughes, and Stoddard (1996) found that approximately 17% of children living in poverty and 20% of uninsured children reported not having usual sources for obtaining routine care, whereas only about 7% of nonpoor, insured, White children did not have usual sources of care. Among children reporting usual sources of care, children living in poverty and uninsured children were three times more likely to name a hospital setting as the site of their usual care than nonpoor, insured children. Both uninsured children and children living in poverty were more likely to travel and wait longer to obtain care. Children living in poverty with usual sources of care were three times more likely to wait 60 minutes or more to see a doctor and twice as likely to have traveled 30 minutes or more to obtain care. Uninsured children were similarly more than twice as likely to wait 60 minutes or more. Uninsured children and insured children living in poverty seem to face similar barriers to adequate care. For example, as many as 18% of uninsured children and 23% of children living in poverty were reported to be inadequately immunized, and these children were less likely to see a physician for symptoms that warranted care (Newacheck et al., 1996). The difference in utilization rates and patterns are not, unfortunately, indicative of poorer and uninsured children being healthier than their more affluent and insured counterparts. Newacheck, Jameson, and Halfon (1994) concluded that poor children not only experience a disproportionately high number of health problems, but they also tend to experience these health problems more severely than more affluent children. For example, children from families with incomes below $10,000 were six times more likely than children from families with incomes of $35,000 or more to be described as having fair or poor health. Similarly, poor children were more likely to experience an array of health

problems, including an increased incidence of middle ear disease, a three times greater likelihood of tooth decay, 50% more nonacne-related skin conditions, and higher blood lead levels.

As the preceding data indicate, universal coverage would not necessarily increase children's and adolescents' access to and use of primary care services. Himmelstein and Woodhandler (1995) pointed out that although the uninsured were more than twice as likely to be unable to obtain needed care, three quarters of those not receiving needed services were insured. Similarly, Medicaid-covered individuals were as likely to not receive care as uninsured individuals. There are, therefore, additional factors that limit young people's access to adequate health care. Halfon, Inkelas, and Wood (1995) cited a number of nonfinancial barriers to care for adolescents, including low parental education levels, larger family size, family social support, communication difficulties between family and providers, and lack of regular sources of primary care. They concluded that a disparity between children's needs and the current organization of the health delivery system exists.

Children and Adolescents Need to Be Served

A fair number of adolescents experience significant health needs and an even larger portion of adolescents are increasingly becoming involved in unhealthy lifestyles. An estimated 2 million youth suffer from chronic conditions that impede activity, including chronic respiratory illness such as asthma and bronchitis (21%); muscle and skeletal disorders such as arthritis (15%); illness of the nervous system such as multiple sclerosis, epilepsy, and cerebral palsy (6%); and hearing impairments (4%) (Starfield, 1992). Another 32% of the 2 million suffer from mental disorders. *Healthy Youth 2000* has targeted 10 health-related areas of concern for adolescents by developing objectives to monitor and assuage the effect these problems have on youth (Fleming, 1996). Although there has been progress in some areas, the overall picture remains one in which adolescents continue to experience significant health risks. For instance, by 1993 *Healthy Youth 2000*'s target for adolescent smoking had not been met. An estimated 25% of high school students reported smoking 20 or more cigarettes daily (Fleming, 1996). Similarly, data from the 1992 National Health Interview

Survey revealed that 27.6% of males and 25% of females had smoked cigarettes in the past 30 days (DHHS, 1995a). Adolescent consumption of alcohol follows a similar disturbing pattern, where present consumption rates exceed targeted goals by *Healthy Youth 2000*.

During the 30 days preceding the survey, almost half of all high school students had drunk at least one alcoholic beverage, and approximately one third had drunk five or more alcoholic beverages on one occasion (Fleming, 1996). Perhaps even more alarming is the fact that 25% of 12- to 13-year-olds had drunk alcohol and that among young adults who had had at least one drink of alcohol, 15.8% reported having had their first drink by age 12 (DHHS, 1995a). Similarly, 38.1% had their first drink of alcohol by age 14. Although some of this early drinking may be experimental, for a substantial number of adolescents it is not. In 1992, almost 14% of 14- to 17-year-olds reported having drunk alcohol on 40 or more days (DHHS, 1995a). Use of illegal drugs is not far behind alcohol use, with 25.9% of youth 14 to 17 years of age having used some type of illegal drug (DHHS, 1995a). Marijuana use among adolescents has increased from 4.0% in 1992 to 7.2% in 1994 (Fleming, 1996). Marijuana use followed a similar pattern for age of initiation as alcohol in the 1992 National Health Interview Survey, with 13% first using the drug by age 12 and more than one third by age 14 (DHHS, 1995a). Although the rates for cocaine use were lower (5.9% of all youth had tried some form of cocaine in their lifetime), 12.6% of youth reported having used some other illegal drug, including LSD, PCP, Ecstasy, mushrooms, speed, ice, and heroin.

Another increasingly predominant health concern for adolescents involves sexual experimentation and the ensuing consequences. Approximately 30% of adolescents 14 to 15 years of age had experienced sexual intercourse (DHHS, 1995a). More than 50% of all high school students have reported having experienced sexual intercourse, with 20% having had four or more partners (Fleming, 1996). Again, this is a behavior that often first occurs at very young ages, with 12% of males reporting their first experience with intercourse by age 12. The interplay between sexual experiences and drug use is illustrated by the 17.1% of sexually experienced adolescents reporting drug or alcohol use before their last sexual intercourse experience (DHHS, 1995a). Only 50% of adolescents

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reported condom use during their last sexual intercourse experience; 12.5% used the withdrawal method and 15.8% used no form of birth control (DHHS, 1995a). *Healthy Youth 2000*'s target of 50 pregnancies per 1,000 adolescent girls has not been met. The rate in 1991 was 75 pregnancies per 1,000 girls aged 15 to 17 (Fleming, 1996). Increasingly, these pregnancies are more likely to be carried to term rather than being terminated. In 1987, the ratio of abortions per 100 live births was 72.6, whereas in 1992 that number dropped to 42.7 (DHHS, 1995b) for adolescents aged 15 to 19. As these young women are less likely to place their infants for adoption and more likely to be unmarried without financial support from the child's father than previous cohort groups, they experience poverty and a host of other difficulties (such as poorer health, school failure, and higher career dissatisfaction than nonpregnant youth; Jorgensen, 1993).

Another consequence of unprotected sexual intercourse is sexually transmitted diseases (STDs). In 1994, gonorrhea rates for males aged 15 to 19 years were below *Healthy Youth 2000*'s target of 750 per 100,000 at 606, but the rates for females aged 15 to 19 years were much higher at 927 (Fleming, 1996). In 1990, 5,507 cases of syphilis were reported for young people 10 to 19 years of age (Leukefeld & Haverkos, 1993). In 1992, 19,872 young people aged 13 to 19 suffered with AIDS (DHHS, 1993). Although 60% of HIV-positive White youth were infected by tainted blood products, more than 60% of Black and Hispanic youth were infected as a result of sexual activity (DHHS, 1993). For that same period of time, 91% of AIDS cases in young adults aged 20 to 24 could be traced to homosexual activity (63%), heterosexual activity (11%), and injecting drug use (17%) (DHHS, 1993). Given that a several-year delay exists between exposure to the HIV retrovirus and the onset of AIDS, it is likely that these youth were infected as adolescents (Adams, Gullotta, & Markstrom-Adams, 1994).

Two other areas of health concern targeted in *Healthy Youth 2000* are eating and exercise patterns in adolescents. In 1992, 50.5% of female adolescents were trying to lose weight, and 22.7% of male adolescents were (DHHS, 1995a). Those trying to lose weight are not necessarily overweight. The *Healthy Youth 2000* report revealed that a smaller percentage of male (21%) and female (34%) adolescents were actually overweight. Among those attempting to lose weight, 4.3% of female and 3.3% of male adolescents had used vomiting as a method of losing weight (DHHS, 1995a). Among adolescent females who thought that they were overweight, 24% had attempted to control their weight in the last week (DHHS, 1995a). Both overweight adolescents and those who are not overweight but who attempt to lose weight are at risk for health-related problems.

Another area of concern for adolescents involves their mental health. One outcome of the distress that some adolescents feel is suicide. *Healthy Youth 2000* set a target of reducing the rate of suicide among youth aged 15 to 19 to no more that 8.2 per 100,000. It also set a goal to reduce the prevalence of mental disorders among children and adolescents to less than 10%. Unfortunately, in 1992 suicide remained the third leading cause of death for those aged 15 to 24 and seventh for children 5 to 14 (DHHS, 1995b). The rate of suicide for youth aged 15 to 19 was 10.8, above the *Healthy Youth 2000* target. In addition, nearly 25% of high school students had seriously considered attempting suicide in the previous year.

The problems of accessibility and cost of health care, coupled with increasing rates of unhealthy behaviors among youth, indicate the need for systematic changes in service delivery. Different health care approaches are required to reach youth who find it difficult to access care, whose families cannot afford care, and who are experimenting with behaviors that could have deleterious consequences. In the next section, we offer the SBHC as a service model that addresses accessibility and cost and may promote the health status of all youth.

School-Based Health Centers

What does an SBHC look like? The typical center's medical service component is staffed with a physical health care professional able to diagnose and prescribe appropriate care including medications for routine medical issues. Those issues can include the treatment of minor episodic illnesses, the provision of well care services, treatment for chronic ailments, reproductive health care, and STD treatment. This health care professional, whether a nurse practitioner or physician's assistant, relates to a supervising phy-

sician and a larger health care establishment, ensuring that young people who need additional medical services will receive them.

The behavioral health component of these centers is staffed with one or more master's-level professionals. Their services are primarily group and prevention focused for problems involving substances, family, peer, and school relationships. Intervention services (crisis intervention and short-term focused therapy) are also offered. As with their medical colleagues, these mental health professionals relate to a supervisory structure that enables a troubled youth to move to more intensive outpatient and pharmacological treatments should that be necessary.

SBHCs are intended to improve accessibility to health care with an emphasis on health promotion and the early identification and treatment of illnesses. To achieve these objectives, the staff of these centers are expected to involve themselves in the life of the school. They are expected to be visible in the school hallways and lunch areas, to initiate health promotion efforts, and to make frequent classroom presentations. This high visibility is intended to encourage student health promotion through information, personal role modeling, and social support.

Other benefits include opportunities to establish an ongoing relationship with one health care provider in times of both sickness and health and a way to avoid appointment cancellations and costly visits to hospital emergency rooms.

Are Programs Within School-Based Health Centers Effective?

As noted earlier, the services SBHCs offer have not been adequately evaluated. In this statement we draw an important distinction between the SBHC as a location for service delivery and the particular services it offers. For example, virtually no one disputes the wisdom of schools as places to effectively educate groups of young people, but many would disagree about the methods used to achieve that education. We contend that SBHCs offer an ideal setting for parent-enrolled youth to receive primary health care. What is at issue is the most effective means to deliver that care to achieve the objectives found in *Healthy People 2000*. What curricula, interventions, and practice techniques for whom, when, and how are they administered are subjects that remain unexplored.

In the few published studies, these issues are not adequately addressed. For example, the data on the effectiveness of school-based interventions for reducing unwanted pregnancies are mixed. A widely cited study by Edwards, Steinman, Arnold, and Hakanson (1980) reported widespread use of St. Paul school-based centers for reproductive health services. This use resulted in reported high contraceptive usage by students and corresponding declines in unwanted births to adolescents. More recently, Kirby and his associates reexamined the supposed success of the St. Paul program (Kirby et al., 1993). By matching the names of female students from academic records to the mothers' names on health department birth records, this research group was able to more accurately assess the birthrates for students attending schools with health centers between 1971 and 1986 in St. Paul. The authors conclude that "the school-based clinics in St. Paul did not significantly reduce birthrates in their respective schools" (Kirby et al., 1993, p. 15).

Zabin and her colleagues (Zabin, Hirsch, Smith, Streett, & Hardy, 1986) undertook a study of four Baltimore SBHCs and the efforts of those centers to reduce unwanted adolescent births. The intervention consisting of "sexuality and contraceptive education, individual and group counseling, and medical and contraceptive services," was delivered by a multidisciplinary team consisting of a social worker and nurse practitioner, and lasted nearly 3 years (Zabin et al., 1986, p. 119). The contraceptive services were delivered off-site. The results of this intervention demonstrated an increase in sexual knowledge among students, little change in attitudes, and a statistically significant delay in the age of first intercourse for youth involved in the full program.

Finally, the Bureau of Primary Health Care (1994) in a document titled *School Based Health Centers That Work* reported that although "evaluation studies have not been performed on any of the [school-based centers found in this document] because they simply do not have adequate resources . . . most clinics were able to supply some statistical data about changes observed over time in clinic registration, service utilization, teen pregnancy, school dropouts, and several other measures" (p. 11). That material combined with anecdotal information suggested that SBHC programs have (a)

improved young people's access to health care, (b) decreased adolescent pregnancies, (c) ensured that pregnant adolescents received appropriate and timely prenatal care, (d) reduced drop-out rates, (e) reduced school absenteeism (due to minor illnesses), (f) provided early detection and intervention for physical and behavioral health problems, and (g) improved self-esteem and communication skills. These subjective impressions are echoed by Joy Dryfoos (1994) in her visits to centers across the country.

There are legitimate reasons for the inability of SBHCs to evaluate the effectiveness of their interventions. They include a lack of funding to undertake this research; the difficulty of tracking youth whose mobility between schools, classes, and communities is staggering; and securing the community/school support necessary to undertake these studies. Nevertheless, the need to determine what works best, in what way, and for whom is a challenge that must be successfully addressed if SBHCs are to fulfill their mission.

Planning, Producing, and Preserving School-Based Health Centers

There are numerous issues that need to be addressed within an SBHC's lifespan. The first involves the activities of a community planning group interested in starting a program. Ideally, this group should combine expertise from the health care community (school nurses, local hospitals, and private medical and mental health practitioners), the school community (school administrators and parents), and the larger community (local politicians, clergy, community activists, professional fund-raisers). To be successful, group members need to be aware of national, local, and historical data on SBHCs, as well as information regarding previous efforts to implement SBHCs in their community.

History suggests that initial community opposition to opening a program is likely. Media or other groups may misconstrue the purpose of SBHCs, fueling community misconceptions. It is important that early in the planning process a program spokesperson be chosen who can effectively communicate the purpose and goals of the group and respond to requests for information. Experience suggests that an effective way to handle community concerns is to

clearly establish the need for services. One effective way of accomplishing this is via a community needs assessment.

The needs assessment should identify problems, concerns, risk behaviors, and perceived needs (both medical and psychosocial) of the target population, and identify which services and resources are already available to address these needs. The district where the SBHC services are needed most, presumably with the highest concentration of medically underserved children and adolescents, should be determined as well. Information regarding the community's willingness and readiness to implement an SBHC is vital. Strategies for distributing the results of the needs assessment to the community should include clarification of the scope of services planned to be delivered by the program and demonstration that these services will fill the gap between what is needed and what is available.

Implementation, the next phase, involves several issues, including securing a community organization with the resources available to support an SBHC. Next, a governing board, if not already in existence and separate from the administrative organization, should be established to develop the policies and procedures that govern the operation of the SBHC. Funding for SBHCs can be obtained in a number of ways, including federal, state, local city funds, private corporations, foundations, and individual private donors. Though many communities have started to bill third parties for services provided by SBHCs, to date this process recoups only a fraction of the expenses incurred. The location of the SBHC should reflect the results of the needs assessment, as well as meet additional specifications. The site should be in a school with a supportive school administration and one able to accommodate the physical needs of the SBHC, including enough space to ensure the confidentiality of services received by the students.

With an Advisory/Governing Board, funds, and a site secured, the next step becomes staffing the SBHC. Most SBHC staff are directly employed by the parent organization. Salary savings can be achieved if the parent organization is willing to provide staff on an in-kind basis. In the process of recruiting potential candidates, highlighting the benefits of working school hours (summers free, periodic vacations) has been helpful, if this potential benefit can be offered in a fashion that maintains year-round programmatic coverage. Local universities with midlevel medical practitioner

training programs are a potential source for recruitment of SBHC medical personnel, as well as other professional networking organizations. Finally, a Community Advisory Board should be developed with the purpose of advising from the community at large and channeling suggestions to administration and the Governing Board. Its composition should mirror that of the planning group and may in fact be a continuation of the planning group.

Ongoing communication and maintenance of political, community, and school support are important components to continued success of the SBHC. Internally, much of the marketing to students will be by word of mouth as students obtain services. Externally, there are a number of strategies that the SBHC can employ to increase student enrollment, use, and awareness. These include maintaining a column in the school newsletter, participating in community events such as awareness days and local health fairs, registering with the local Info-Line or other community referral sources that provide information on child and adolescent health issues, involving local media during special health promotion events sponsored by the SBHC, and providing students, parents, and school personnel with satisfaction questionnaires.

SBHC maintenance should also include monthly or bimonthly meetings between SBHC staff and school administrators and personnel to strengthen the collaborative efforts between the SBHC and school health services personnel and decrease duplication of services and share current medical and mental health issues. Once the SBHC becomes operational, there is still the likelihood of community opposition. Frequent informational sessions for the community can provide opportunities to market the positive influences the SBHC has had on the school and community. The SBHC should develop culturally sensitive materials to be distributed that describe services rendered, hours of operation, how students access services, and other basic information.

Possible School-Based Health Center Organizational Structures

Although not the first state to develop SBHCs, Connecticut has been one of the most innovative in developing this service. In this

section, we examine the various organizational structures the state has funded, their strengths and their limitations.

Even though Connecticut's 41 operational SBHCs provide many of the same services as their counterparts across the country, their structures are markedly different. In Connecticut, local communities, and not counties or the state, hold the primary responsibility for designing each SBHC. Thus, each SBHC reflects the local community's identified needs and level of comfort with the services to be offered. As a state-level strategy for extending services to needy young people, the Connecticut experience is worthy of study as it illustrates one way in which local opposition can be turned into support. The key to this process is local involvement, participation, and a role in decision making. In Connecticut, this experiment in local control has resulted in the emergence of seven distinct organizational models.

Hospitals

Hospitals have considerable experience in providing health care to local communities. There are advantages for SBHC sponsorship by hospitals. Hospitals can provide the financial stability that SBHCs need to sustain themselves while waiting for grant money, which can be delayed within federal and state agencies. In addition, hospitals can provide SBHCs with medical staff. With their competitive salaries, equitable benefits, and stable environments, these institutions have traditionally been able to find highly skilled candidates.

Being hospital employed yet school based also permits SBHC staff to rotate through the hospital's other outpatient facilities during nonoperational periods of the SBHC (i.e., school vacations, summers). A partnership is created where the SBHC is assured access to hospital services, such as including laboratory testing and referrals to specialty clinics, needed to ensure the provision of quality, comprehensive services to the students. These services can include 24-hour coverage for the SBHC through the hospital's on-call schedule. Hospitals are also able to provide continuing medical and nursing education that medical staff need to maintain proficient skills. Similarly, SBHC staff have access to the administrative services of the hospital, such as human services, billing, and legal counsel.

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There are, however, disadvantages to this type of organizational structure. There is the possibility that the hospital will view the SBHC as a "minor player." The hospital and SBHC may have different views about important issues. Issues that may be important for SBHC staff but not necessarily hospital management can include contracting with Medicaid managed care organizations, grant submission, and approval of budget revisions. Another disadvantage can involve the hospital's lack of experience in working with grant funds and, therefore, their lack of understanding about payment delays, completion of applications, reporting requirements, and other obligations to funding sources. In addition, SBHCs may encounter difficulty with hospital administrative procedures, such as committee approval, internal postings, disciplinary process, and termination procedures, when attempting to adopt or revise policies and when hiring or terminating personnel.

Community Health Centers

Community health centers (CHCs) are licensed outpatient health care facilities that historically have provided services to the medically uninsured and underinsured. CHCs typically provide services for the entire age spectrum, promote access and accessibility, and strive to eliminate barriers to care. All of these factors make CHCs qualified candidates for sponsoring SBHCs.

CHCs have additional advantages, including their knowledge about and experience in providing health services to children and adolescents. They are likely to have experience with grant writing and the grant implementation process, as well as reporting requirements and delays in receiving funding. They have the ability to provide summer employment for the SBHC staff. In addition, SBHCs can refer students to the CHC for services that may not be offered by the SBHC, such as dental, nutritional, and Ob-Gyn care. Because SBHC staff may be the clinicians providing services at the CHC during evening hours, weekends, and vacations, this referral process helps to maintain a continuity of care.

Advantages of sponsorship by a CHC also include the opportunity for SBHC staff to network and interact with CHC staff of the same discipline. This allows intradisciplinary quality assurance activities to occur (e.g., peer review for social workers, chart review for medical providers). These interactions can also provide the

opportunity for SBHC staff to participate in workshops, in-service programs, and mandatory training sponsored by the CHC. Support with implementation of the billing process is also likely to be available to SBHCs, given CHCs' billing experience with Medicaid and Medicare programs.

Unfortunately, CHCs have difficulty recruiting health care providers due to their poor salaries, the unfavorable location of many facilities, and a lack of interest by some health care providers in working with indigent populations. Additionally, given delays in disbursements of grant funds, large volumes of uncollectibles, and decreasing amounts of available funding, CHCs may not be financially equipped to support SBHCs. CHCs have historically not been effective fund-raisers. They have typically relied on federal and state funding, revenues generated from third-party billing, and public and private donations. Should the SBHC need to engage in fundraising activities, the CHC may not be a viable source of support.

Private, Not-for-Profit Boards of Directors

A private, not-for-profit board of directors is the sponsoring entity in one Connecticut community. The board was formed solely out of the necessity to maintain SBHC operations in that community. This board has effectively executed the responsibilities of a sponsoring organization despite model obstacles. It is not a preferred model, but with the correct mélange of committed and responsive board members, it can be successfully instituted. This model does have some advantages, namely, its freedom and flexibility. Policy changes can be implemented within a short period of time, without the bureaucracy that often characterizes larger sponsoring organizations. The organization has the freedom and ability to design and customize programs to its own specifications. It can conduct fundraising activities without limits imposed on it, freeing it to pursue private and public funding sources that might otherwise be restricted.

A private, not-for-profit board of directors, however, has no financial stability of its own. Because it has no other sources of revenue outside of the SBHC, it may have to seek out short-term financing to meet payroll and cover unexpected expenses. Another concern for this type of organization is whether to employ SBHC

staff directly. Financial constraints and an inability to provide direct clinical support may necessitate a subcontractual agreement for the provision of health services at SBHCs. Finally, given the model's disadvantages, there is a strong possibility for failure if cohesive links are not secured and maintained with health care providers and agencies within the community.

Human Service Agencies

A not-for-profit human service agency operates two SBHCs in Connecticut. This agency is viewed as an umbrella organization that houses many community programs and operates under the philosophy of "spinning off" programs when they become self-sustaining. This is an organization that has experience in grant writing, grant implementation, and fund procurement, as well as in organizing and establishing community programs. Implemented programs are more likely to garner credibility and community support because they are presumably generated by community needs. Finally, human service agencies are likely to be experienced in implementing programs for children and adolescents.

Not-for-profit human service agencies often encounter the same difficulties mentioned for not-for-profit boards of directors, because they, too, have no independent financial stability. The SBHC is viewed as a separate program sponsored by an agency that manages multiple, yet independent, programs. Revenues and funding from other programs cannot be used to support the SBHC. Additionally, because the nature of the boards' responsibilities includes responding to a spectrum of programs that can vary immensely, board composition may lack sufficient representation from the medical community. The parent organization is not a direct provider of services; therefore, it must subcontract with community health care providers for the provision of health services and is thus not able to directly provide clinical support activities required by the SBHC staff.

Boards of Education

The function of the local board of education has been that of assuring appropriate educational programs and resources for students. Although they have not historically been involved in providing comprehensive health care beyond mandated health services, several communities in Connecticut have opted to employ this model. Advocacy for SBHCs at the board level is likely to grow into support at the school and parent levels. Because the board of education obtains financial support from the town council, it provides a strong financial base for SBHCs. Opportunities for augmentation of services and the development of new sites are enhanced by the ability of the board to channel funds from the school system into SBHCs. Another advantage of this model involves the fact that SBHCs sponsored by a municipality are waived from the Certificate of Need (CON) process in Connecticut.

Boards of education are often not experienced in providing comprehensive health care services to students and must contract out services if they do not wish to employ staff directly. Disadvantages to subcontracting medical staff have been mentioned previously. In addition, negotiating within the constraints of local politics unmistakably affects funding. As such, SBHCs under this model may have to endure the local bureaucracy when adopting or revising policies, and renewing applications for continued funding. In Connecticut, this is the most costly model to fund because medical providers employed by the boards of education are required to become union members. These salaries are typically higher than nonunion medical practitioners.

City Health Departments

In Connecticut, city health departments have reduced the number of services they provide to local communities. They have developed into a resource for assessing health services by focusing on data collection and the availability of health care within the community. This administrative model is able to connect SBHCs with other services concurrently being provided in the community by the local health department, such as HIV testing, WIC, and Healthy Start programs. These additional services can be easily integrated into those being provided by the SBHC, promoting comprehensive, "one-stop shopping" health care. SBHCs operating under city health departments may be able to access more readily other city services necessary for the evolution and operation of the SBHC (including renovations, weights and measures for calibration of medical equipment, etc.). Advantages to this model also seen in

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other types of administrative models include SBHC staff having the opportunity for summer employment in other areas of the health department (well child care and family planning clinics), sponsorship by a municipality waiving the SBHC from the CON process in Connecticut, and the ability of the local health department to provide financial support while the SBHC waits for grant funds.

Disadvantages to this model also mirror some of the previous models. Local bureaucracy may hamper the timeliness of adopting and revising policies and renewing application for continued funding. In addition, the health department may not have resources to directly provide mental health services, and it thus may have to subcontract with a mental health or social service agency.

Social Service/Mental Health Agencies

There are 11 SBHCs and an expanded school health program in the New London and Groton communities that are sponsored by a social service/mental health agency, Child and Family Agency. A unique advantage to this type of model is its ability to offer an impressive mental health component to its SBHCs. In addition, because the parent organization provides numerous outside mental health programs, it enjoys enhanced financial stability, which it can share with SBHCs. It is also able to offer experience and assistance with billing processes and negotiating with the myriad managed care organizations that exist and their individual requirements (e.g., periodic updates of clinical assessments, treatment plans, and obtaining prior authorization for services). SBHC staff have the opportunity to be employed during evening, weekend, and summer periods, allowing for continuity of care for students who require additional services during summer and vacations. This arrangement also provides staff with peer review, clinical supervision, and in-service training. Close cooperation with the parent organization allows students and their families to access services at hours more convenient for working parents. Additionally, SBHCs' services can be augmented by 24-hour on-call services staffed by mental health clinicians able to properly assess and triage students, reducing unnecessary emergency room visits.

The strong mental health and nurse practitioner component of this type of parent organization lacks a complementary physician

component, requiring the mental health agency to subcontract the private physician community for supervisory services.

Each of the models offered in this section has limitations, but they are limitations that each of the applicant communities has chosen to live with. And in this statement lies an insight: Permit a local community to design its own service delivery mechanism, and it is likely that services will be developed; impose a fixed structure on a community, and it is just as likely that the proposed service will be swamped by opposition.

School-Based Health Centers Functioning in Connecticut

In Connecticut, nearly 40% of the children and adolescents registered for care by SBHCs had no regular source of medical care outside of this resource. This percentage highlights SBHCs' ability to offer an avenue for care that might otherwise not be received.

In 1995, there were 40 SBHCs funded by the Connecticut Department of Public Health. The greatest concentration are housed in high schools (17), followed by middle schools (12) and elementary schools (9). The remaining two SBHCs were housed in an early childhood care center and a school that catered to students in prekindergarten through eighth grade. An additional eight SBHCs operated in Connecticut in 1995 without state funding.

Throughout Connecticut, utilization rates for 1995 in Department of Public Health-funded SBHCs increased from 1994. The total number of students receiving services reached 12,117, a 36% increase from 1994. These students visited SBHCs 60,441 times to receive a total of 224,767 services, reflecting a 44% increase in total number of visits and a 60% increase in total number of youth provided with services from 1994. The 10 most frequently provided medical services by Department of Public Health-funded SBHCs are listed in Table 6.1. The increased number of young people provided with services is also clear from these data.

In comparing this list of services with the *Healthy People 2000* objectives for adolescents and young adults, it would appear that SBHCs in this Connecticut sample are providing reproductive health care education and services to parent-enrolled youth. The development of additional SBHCs would enable this nation to make

Table 6.1 Medical Services Most Frequently Provided by Department of Public Health-Funded School-Based Health Centers in SFY 1995

		No. of Youth Services Provided to Students	
Rank	*Service Type*	*SFY 1995*	*SFY 1994 (rank)*
1	Medical history taken	22,138	14,094 (1)
2	General health education	21,528	11,816 (3)
3	Reproductive health education	20,013	13,092 (2)
4	Physical exam	18,036	11,062 (4)
5	Health screening	9,082	4,774 (6)
6	Medicine administered or dispensed	8,932	5,513 (5)
7	Reproductive health services[a]	3,746	2,342 (8)
8	Prescription given	2,966	1,554 (9)
9	Tuberculosis testing	1,314	1,047 (10)
10	Emergency treatment	930	n/a[b]

NOTE: SFY = state fiscal year.
a. Includes pelvic exams, Pap smears, sexually transmitted disease diagnosis and treatment, and methods check.
b. n/a = not applicable; service type not ranked in SFY 1994.

greater strides in extending information to young people on reproduction matters and STDs. It would extend an "awareness of the risks of sexual behavior and of sexually transmitted diseases [that] is particularly crucial for adolescents. Through school-based education on family life and human sexuality, youth can be offered the knowledge and skills they need to reduce their risk" of unwanted pregnancies and STDs (DHHS, 1990, p. 505). The provision of preventive educational services can be done in partnership with the health education staff of the educational institution. The diagnosis and treatment of STDs can be done at the SBHC in a supportive role with the young person's primary care physician.

In another area, that of tuberculosis identification, the data found in Table 6.1 suggest that SBHCs are ideal locations for testing and meeting *Healthy People*'s goal in this regard and others involving providing "information and counseling about immunizations and offer[ing] immunizations as appropriate for their patients" (DHHS, 1990, p. 523).

Table 6.2 Dental Services Most Frequently Provided by Department of Public Health-Funded School-Based Health Centers in SFY 1995

		No. of Youth Services Provided to Students	
Rank	*Service Type*	*SFY 1995*	*SFY 1994*
1	Fillings	673	n/a[a]
2	Prophylactic treatment	639	n/a
3	Preventive care training	601	n/a
4	Periodic exam	573	n/a
5	Complete X ray	472	n/a
6	Emergency treatment	246	n/a
7	Single X ray	236	n/a
8	Fluoride application	211	n/a
9	Dental scaling	200	n/a
10	Extraction	84	n/a

NOTE: Dental services provided only in Bridgeport (two elementary schools and three high schools) and Stamford (one high school). SFY = state fiscal year.
a. n/a = not applicable; service type not ranked in SFY 1994.

Six Connecticut SBHCs also provide dental services, ranging from preventive care training to fillings and emergency dental treatment. The top 10 dental services provided are displayed in Table 6.2. These services are in keeping with the objectives of *Healthy People 2000* (DHHS, 1990, p. 353) to "reduce untreated dental caries" among adolescents. As *Healthy People* notes:

> Dental caries is a unique microbial infection. Once established, it is progressive, does not heal without treatment, and leaves visible evidence of past infection. Because early diagnosis and prompt treatment of caries can halt tooth destruction and prevent tooth loss, low prevalence of untreated caries should be attainable. (p. 353)

The location of dental services within SBHCs provides opportunities for the early diagnosis and treatment necessary to stop tooth decay and tooth loss.

Psychological services were also a valuable resource offered to students. Utilization rates for the 10 most frequently provided

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Table 6.3 Psychosocial Services Most Frequently Provided by Department of Public Health-Funded School-Based Health Centers in SFY 1995

		No. of Youth Provided With Services	
Rank	*Service Type*	*SFY 1995*	*SFY 1994 (rank)*
1	Psychological counseling/support	21,528	10,159 (1)
2	Referral/advocacy	12,784	6,079 (3)
3	Family problem counseling	10,354	6,730 (2)
4	Peer problem counseling	7,012	5,910 (4)
5	School problem counseling	6,833	4,814 (5)
6	Stress management counseling	5,405	2,762 (6)
7	Substance abuse counseling	3,106	2,141 (7)
8	Depression counseling	3,031	1,427 (8)
9	Violence counseling	2,989	1,353 (10)
10	Parenting counseling	2,796	n/a[a]

NOTE: SFY = state fiscal year.
a. n/a = not applicable; service type not ranked in SFY 1994.

psychosocial services also increased from 1994 to 1995, as displayed in Table 6.3. Psychosocial services remain an important piece of SBHC operation, with students using counseling services to deal with family, peer, and school-related issues, as well as more personal issues such as depression and substance abuse.

Healthy People 2000 identifies violence, depression, and the use of alcohol, tobacco, and illicit drugs as major health impediments for adolescents and young adults:

> Although the 1980s brought some improvements in the health status of adolescents and young adults, many other young people still must confront a constellation of problems, including alcohol and other drug abuse, school failure, delinquency, peer group violence, and unwanted pregnancy. Although education about risks is important, programs for adolescents and young adults must go beyond education to include in-depth counseling and support. (DHHS, 1990, p. 18)

Clearly, the behavioral health care staff at these SBHCs provided significant care to youth in need in areas identified by *Healthy*

People 2000. What is not known by this utilization data is whether the specific interventions used by those staff made a difference. Furthermore, the authors of this chapter have concerns that a very small number of young people needing significant behavioral health services could inhibit population-focused efforts directed at health promotion. While not ignoring the need of the individual, group needs must be attended to.

Summary

It is apparent that young people do not have access to adequate health services, and similarly apparent that many of these children and adolescents have a crucial need for such services. By not addressing this disparity between the health needs of young people and the services available to them, those responsible for the nation's health have created a situation in which the treatment of preventable health concerns costs much more than their prevention. Prevention efforts have been shown to affect adolescent tobacco use, drug and alcohol abuse, and sexual behaviors (Pentz et al., 1989; Vincent, Clearie, & Schluchter, 1987; Zabin et al., 1986) and to cost less than the treatments for the health-related outcomes of such behaviors (National Adolescent Health Information Center, 1994). To institute prevention services cost-effectively, all young people need to be tracked. The National Adolescent Health Information Center (1994) notes that because adolescent behavior changes dramatically from year to year, to ensure successful primary prevention efforts, yearly contacts with youth are needed. SBHCs have the ability to follow the majority of students from year to year and therefore represent a potential source for closing the gap between needed and available services for young people.

Because SBHCs offer barrier-free access to students, insurance status, costs, and parental availability do not affect adolescents' ability to obtain needed services. SBHCs offer comprehensive and accessible care to all students. Gullotta and Noyes (1995) note that SBHCs are also able to promote the integration of services and continuity of care within a community focus. That is, SBHCs function within a community paradigm, where, as seen in Connecticut, the community embraces the planning and implementation of health services for its youth. SBHC services are often linked to area

hospitals and mental and social service agencies, and they thus offer students access to additional needed services. Students develop relationships with SBHC staff not only within the school setting but also outside of the school setting within the larger community because SBHC staff are likely to be allied with other community service agencies. These extensive staff relationships and community partnerships have the ability to promote healthy lifestyle choices by young people.

Issues for designing and preserving SBHCs develop out of this community focus, and they include both confronting community opposition and creating avenues for financial and structural community support and service expansion. Connecticut can serve as an example of successful SBHC implementation where local communities retain control. Although perfection has not necessarily been achieved by the seven organizational models in existence in Connecticut, their success in delivering community-tailored services to children and adolescents flourishes. An examination of service delivery data reveals that utilization and enrollment rates rise from year to year throughout the state and across various organizational models.

Unfortunately, the data provided here do not allow for definitive statements regarding the lasting effects of SBHC services on children's and adolescents' health. Such service analysis is needed to fully assess what SBHC interventions will have a positive effect on children's and adolescents' health. Presently, however, it can be successfully argued that SBHCs offer a unique ability to reach many youth, potentially almost all youth, cost-effectively in a manner that places them in a position to be qualified and effective gatekeepers for managed care organizations. Through SBHCs' comprehensive, barrier-free access and emphasis on prevention through early identification and treatment, appears their ability to reduce adolescent health concerns while not squandering available funds.

Recommendations for *Healthy People 2010*

1. Our first recommendation is to provide the necessary financial support to increase the number of SBHCs from the current 600 nationwide to 6,000 by the year 2010. Currently, there are 29,120 secondary schools in the United States. The U.S. Census Bureau

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(1995, p. 141) reports that 4,688 have 1,000 or more students. Each of these schools should have an SBHC. The remaining 1,312 new sites should be apportioned between elementary, middle, and smaller high schools across the country.

2. Next, the focus of SBHCs should remain preventive care including assessments and referral. SBHCs offer an ideal site for population-focused interventions. They provide unique opportunities for the staff to become acquainted with the students while they are healthy. These opportunities provide teaching and role modeling instances for the development of healthy lifestyles. These opportunities should not be lost to providing intensive treatment to a very small number of youth needing intensive service.

3. Our third recommendation focuses on the type of preventive services that SBHCs should offer. By the year 2010, dental care should be added to the existing primary health care and behavioral health care services that are presently offered.

4. The fourth recommendation is that in the behavioral health area these school-based services should encompass prevention's available technology (Gullotta, 1994) (i.e., knowledge enhancement, the promotion of caring groups, the enhancement of resiliency and interpersonal competencies, and advocacy for the change of identified institutional practices that contribute to dysfunctional patterns of living among young people).

5. Next, SBHCs should be the center for population-focused interventions to promote physical and behavioral health. It has been our experience that many school-based educational programs with intentions of reducing drug, alcohol, and tobacco use or preventing STDs or decreasing interpersonal violence soon become lost in schools. The initial enthusiasm that launched these educational efforts rarely penetrates the day-to-day operation of the system such that most of these programs fail from neglect within a few years of their introduction. The home for these group preventive interventions can and should be the SBHC.

6. The sixth recommendation supports a staffing pattern that is able to address the physical and mental health concerns of young people. For too long, medical, dental, and behavioral health services to young people have operated in isolation from each other. Within a school and under the auspices of an SBHC, a nurse practitioner, social worker, and dental hygienist can offer the preventive services so necessary to ensuring good health. With

linkages to public institutions and private practitioners, these health care professionals working in partnership can improve the health of youth in need.

7. Acknowledging that health care professions operate in isolation from one another, attention must be given to providing the necessary graduate training to encourage disciplinary integration. Ideally, these cross-disciplinary collaborations should occur in graduate school and residency. The federal government should encourage these collaborations by including SBHCs as acceptable sites for students in the health professions to perform their postgraduate externships.

8. It is vitally important that at an undergraduate level, college students have an opportunity to gain a greater understanding of how health can be promoted and illness prevented. For example, given the strife and tension found in many schools across the United States, it is difficult to understand why schools of education have not developed courses that would equip new teachers at all grade levels with abilities in conflict resolution and social problem solving.

9. Much interest has been expressed in recent years for strengthening ties between parents and educators. In many communities, parents are only peripherally involved, and residents without children have no involvement whatsoever with their local school system. Child and family SBHCs offer one opportunity to increase broad community involvement with the school community while increasing family access to affordable medical care. This family-child model of SBHC care should be piloted.

10. Federal and state law should require third-party payers to include school-based health services in their benefit package. Presently, most SBHCs are funded by grants. To develop viability, it is essential that these centers be able to bill and collect for their services.

11. We do not believe that there is one, two, or even three ideal operational models for administering SBHCs. We recommend that experiments in sponsorship continue.

12. Priority funding should be given to organizations and school systems that are willing to engage in community research to determine what services are most effectively offered through this delivery mechanism. This research initiative should be designed within the Public Health Service and carried out across the country with volunteer SBHC sites.

References

Adams, G. R., Gullotta, T. P., & Markstrom-Adams, C. (1994). *Adolescent life experiences* (3rd ed.). Pacific Grove, CA: Brooks/Cole.

Bureau of Primary Health Care. (1994). *School based health centers that work.* Washington, DC: U.S. Government Printing Office.

Dryfoos, J. (1994). *Full-service schools: A revolution in health and social services for children, youth, and families.* San Francisco: Jossey-Bass.

Edwards, L., Steinman, M., Arnold, K., & Hakanson, E. (1980). Adolescent prevention services in high school clinics. *Family Planning Perspectives, 12*(1), 6-14.

Fleming, M. (1996). *Healthy youth 2000: A mid-decade review.* Chicago: American Medical Association, Department of Adolescent Health.

Gullotta, T. P. (1994). The what, who, why, where, when, and how of primary prevention. *Journal of Primary Prevention, 15*(1), 5-14.

Gullotta, T. P., & Noyes, L. (1995). The changing paradigm of community health: The role of school-based health centers. *Adolescence, 30*(117), 107-115.

Halfon, N., Inkelas, M., & Wood, D. (1995). Nonfinancial barriers to care for children and youth. *Annual Review of Public Health, 16,* 447-472.

Himmelstein, D. U., & Woodhandler, S. (1995). Care denied: U.S. residents who are unable to obtain needed medical services. *American Journal of Public Health, 85,* 341-344.

Jorgensen, S. R. (1993). Adolescent pregnancy and parenting. In T. P. Gullotta, G. R. Adams, & R. Montemayor (Eds.), *Adolescent sexuality* (pp. 130-140). Newbury Park, CA: Sage.

Kirby, D., Resnick, M. D., Downes, B., Kocher, T., Gunderson, P., Potthoff, S., Zelterman, D., & Blum, R. W. (1993). The effects of school-based health clinics in St. Paul on school-wide birthrates. *Family Planning Perspectives, 25*(12), 12-16.

Leukefeld, C. G., & Haverkos, H. W. (1993). Sexually transmitted diseases. In T. P. Gullotta, G. R. Adams, & R. Montemayor (Eds.), *Adolescent sexuality* (pp. 161-180). Thousand Oaks, CA: Sage.

National Adolescent Health Information Center. (1994). *Fact sheet on investing in preventive health services for adolescents.* San Francisco: University of California National Adolescent Health Information Center.

Newacheck, P. W., Hughes, D. C., & Stoddard, J. J. (1996). Children's access to primary care: Differences by race, income, and insurance status. *Pediatrics, 97,* 26-32.

Newacheck, P. W., Jameson, W. J., & Halfon, N. (1994). Health status and income: The impact of poverty on child health. *Journal of School Health, 64,* 229-233.

Pentz, M. A., Dwyer, J. H., MacKinnon, D. P., Flay, B. R., Hansen, W. B., Wang, E. Y., & Johnson, C. A. (1989). A multicommunity trial for primary prevention of adolescent drug abuse. *Journal of the American Medical Association, 261,* 3259-3266.

Starfield, B. (1992). Child and adolescent health status measures. *Future of Children, 2*(2), 25-39. [Special issue: U.S. Health Care for Children]

U.S. Census Bureau. (1995). *Statistical abstract of the United States, 115th edition.* Washington, DC: U.S. Government Printing Office.

U.S. Department of Health and Human Services. (1990). *Healthy people 2000: National health promotion and disease prevention objectives.* Washington, DC: U.S. Government Printing Office.

U.S. Department of Health and Human Services. (1993). *Child health USA '92* (HRSA No. MCH-92-6). Washington, DC: U.S. Government Printing Office.

U.S. Department of Health and Human Services. (1995a). *Health-risk behaviors among our nation's youth: United States, 1992* (Vital and Health Statistics, Series 10, No. 192). Washington, DC: U.S. Government Printing Office.

U.S. Department of Health and Human Services. (1995b). *Health, United States 1994.* Washington, DC: U.S. Government Printing Office.

Vincent, M. L., Clearie, A. F., & Schluchter, M. D. (1987). Reducing adolescent pregnancy through school and community-based education. *Journal of the American Medical Association, 257,* 3382-3386.

Zabin, L. S., Hirsch, M. B., Smith, E. A., Streett, R., & Hardy, J. B. (1986). Evaluation of a pregnancy prevention program for urban teenagers. *Family Planning Perspectives, 18*(3), 119-126.

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